



# D.C.'s VITAL RECORDS AUTOMATED TO SPEED COPIES

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Issuing copies of vital records is a basic service that most health departments provide. Like other health services, the public demand has increased rapidly in the District of Columbia. We now issue more copies of records every 2 weeks than were issued annually in 1940. This increase may not seem an impressive statistic until we realize the section is occupying the same space today as it had in 1940 and employs fewer persons now than 30 years ago.

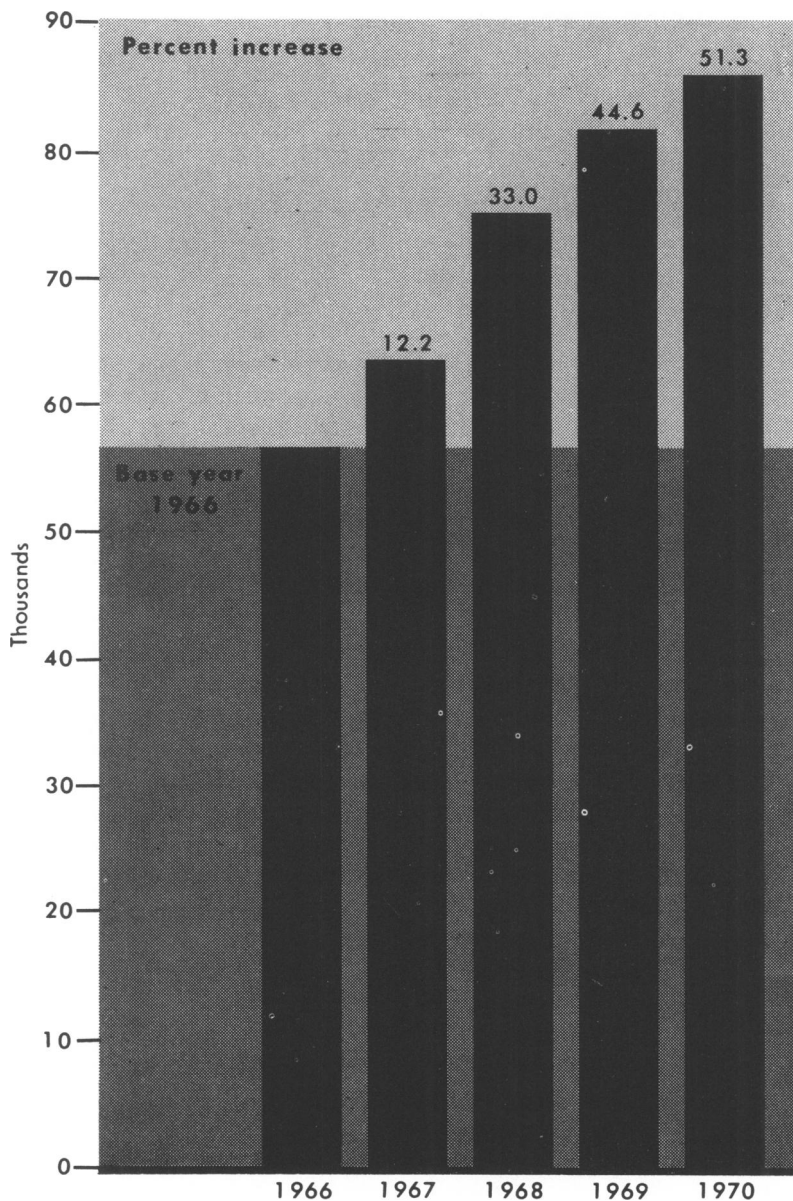
*One cassette holds 1,500 records and replaces six of these volumes*

## **Before Conversion**

Because of the District's unique position as the only completely metropolitan State in the Union, we issue a higher percentage of copies of our records directly to the requester than do most State vital records offices. Increases in inperson requests for the past 5 years are shown in the chart. During the same time requests by mail remained relatively constant at 50,000 per year.

In 1966, the Vital Records Section had 17 full-time employees to issue the 48,000 documents requested by mail and the 56,000 records requested in person. The staff worked an average of 30 hours per week total overtime. Verifications of records needed by other governmental agencies added 10,000 more requests. Our average timelag during 1966 was 1 to 4 weeks to answer mail and 2 to 6 months to answer verification requests.

The office layout and operation at that time was similar to the vital records sections of most



metropolitan health departments. The applicants filled out their requests at a large counter near the office entrance. Near the counter were the indexes which were the first items to be consulted by the clerical staff in response to a request for a record. After finding the certificate number, the clerk then went to the original records, which were located in another area. The original record was

then copied on an office copier. After this procedure it was hoped that the record would be returned to its proper place, and the copy was shown to the requester to check. After a fee was collected and given to the cashier, the copy was sealed, dated, and given to the requester.

According to a study conducted in 1967, it took an average of 9 minutes to complete an

inperson request. We believed that this was far too slow. The method of operation had remained unchanged since it had been devised in the late 19th century.

At school registration time each year, applicants for birth records lined up before 7 a.m. and by noon the line extended outside the building, through the parking lot, and down C Street for half a block. The long lines were, of course, televised and lamented. At this time of the year, the entire office staff was directly engaged in filling inperson requests made at the counter. Mail and telephones went unanswered for the duration of this seasonal influx of applicants. We believed that the answer to our difficulties was not more space nor more personnel but a new method of operation.

### Choosing A System

Miniaturization of records to save space and reduce the work area was one obvious solution. Automation of records to reduce clerical work and increase speed was another possible answer. The systems we considered were video tape, on-line data processing, microfiche, roll microfilm, and Miracode.

Miracode (A) was chosen as the best possible solution at present for the kind of record operation we had to conduct, because of its low cost, speed of retrieval, compactness of storage, required specific search, and file integrity that is a must to vital records operations. On-line data processing did not reproduce the signatures and time stamps so important to the documentation of vital records. The roll microfilm, although it had good file integrity, was too slow and tiring to the eyes. The microfiche seemed

cumbersome, and we were concerned about misfiling or loss of the individual microfiche.

By using the Miracode retrieval unit, a clerk could retrieve, visually display the record, and print a copy in seconds while seated. The physical and time-consuming work that the clerical staff formerly did to obtain a copy of a record was substantially reduced. As the microfilm contains its own index, we no longer needed the certificate number to locate the document. The heavy annual indexes need be consulted no longer. In addition, we could store a million and a quarter birth records in one cabinet which is immediately available to the operator. The file cabinet is set up chronologically, and each cassette of film contains all records of births occurring within specific date parameters.

The records of the 5,000 births in 1905 permitted us to combine 2 months' records into one cassette of film. The 30,000 births recorded in 1965, however, forced us to divide each month into two periods, the 1st to the 15th and the 16th to the last, and 24 cassettes were used for 1965 although only six were needed for 1905. A cassette of film will hold approximately 1,500 birth records and the code for each record; thus the cassette makes the index and the books of records obsolete.

### Coding System

The film is coded at the same time the documents are microfilmed, and the accuracy of the code determines the efficiency of the retrieval. Our index code consists of nine items of information. Item 1 is sex, and items 2 and 3 are the day of the event.

(The month and year of the event are determined by which cassette of film is inserted into the machine.) Items 4, 5, and 6 are the first three letters of the mother's maiden name. Item 7 is the first letter of the father's surname (if a father's name is not designated, this item is coded 0). Items 8 and 9 are the first and last letters of the mother's given name.

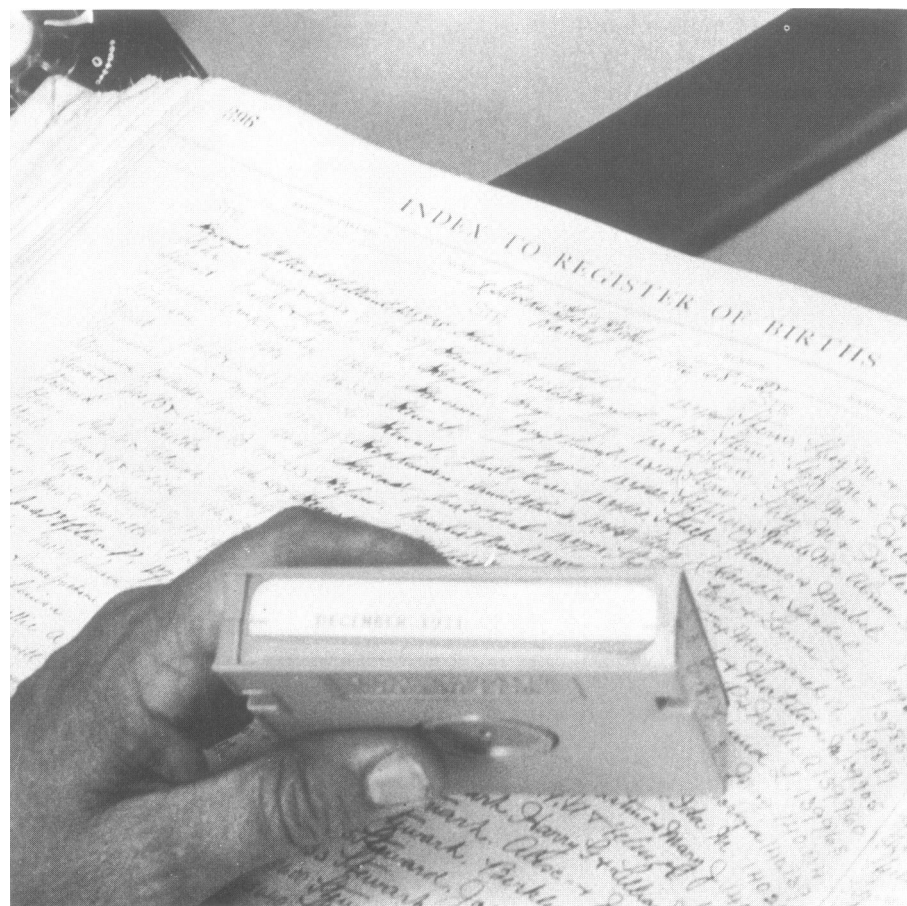
For example, if a woman whose maiden name was Mary Brown applied for her son's birth certificate, and her son was born on July 12, 1927, the operator would select the cassette of film containing all births occurring in July 1927. She would insert the cassette into the retrieval unit and code item 1 as male (M) and 12 for the 12th day; she would then code BRO (the first three letters of the mother's maiden name) in items 4, 5, and 6; delete the initial of the father's surname in item 7; and code MY for Mary in items 8 and 9.

If the mother's maiden name was not supplied on an application received by mail or was unknown to the applicant, the operator would code in the first letter of the father's surname in item 7, and delete items 4, 5, and 6.

In either of the previously mentioned searches, the proper record will be displayed on the reading screen within 9 seconds. If a coding error is made, the operator can selectively delete one-third of the information and search the entire cassette three times within half a minute.

In a study done several years ago by the National Office of Vital Statistics, the mother's maiden name was the single item most often correct on an application for a birth certificate. Although 27 items can be coded for each document filmed by the Mir-

*Cumbersome annual index is replaced by cassette*



acode camera, it is our experience that the nine items we currently code are sufficient to locate any filmed record.

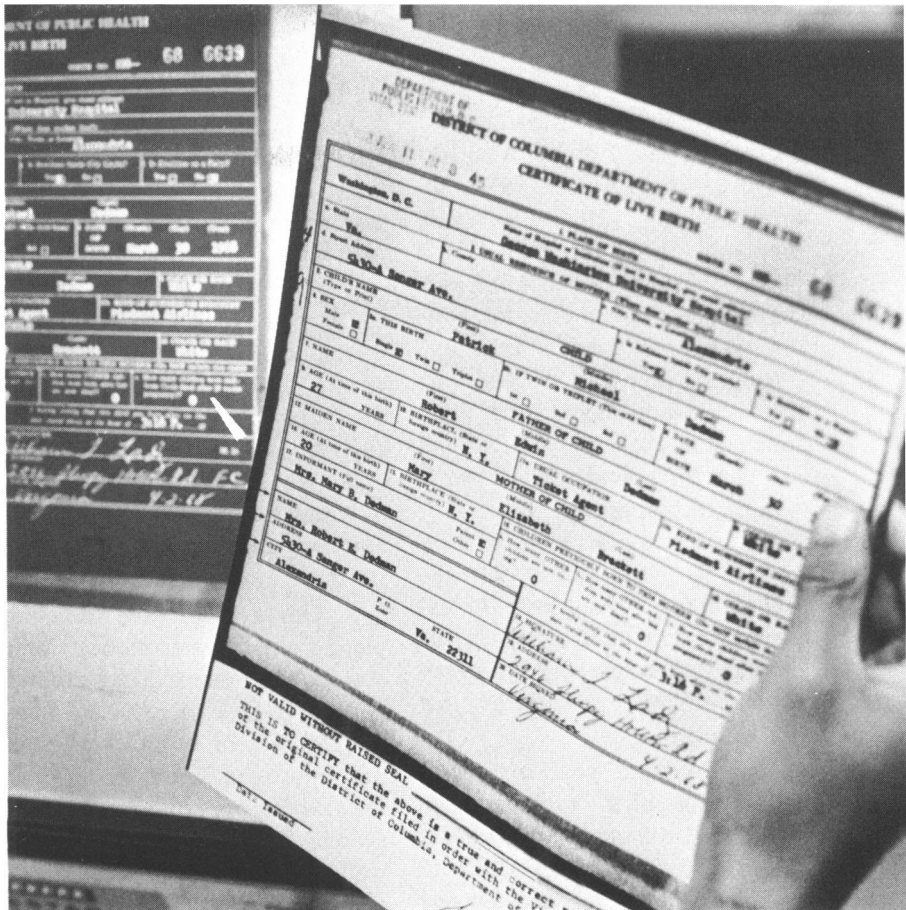
The same procedure is used for death records with the exception that the name of the deceased is coded rather than the mother's maiden name, and item 7 (first letter of the father's name) is not coded for a death record.

### Conversion Project

To get the system into operation, we decided on a 1-year project to convert 1 million birth and death records to microfilm. We divided the project into personnel, equipment, and supplies.

We leased some equipment for 1 year—two microfilers at a cost of \$7,751.20 and two input control keyboards for \$2,910. The total cost of equipment purchased for the conversion was \$26,110.50, and supplies cost \$6,397.20. Items purchased were as follows:

Item	Cost
Input devices .....	\$12,278.00
Microfilmer with film unit.....	8,668.00
Input control keyboard.....	3,538.00
Presstape film splicer....	14.00
Manual magazine loading station.....	58.00
File devices.....	491.00
Retrieval file console....	223.25
10-drawer film file cabinet.....	267.75
Retrieval devices.....	13,341.00
Reader-printer including parity check, keyboard control unit, logic package and wide screen....	10,450.00
Automated retrieval keyboard, 3 at \$679 each.....	2,037.00
Print speedup kit.....	565.00
Retrieval station console.....	289.00
Supplies.....	6,397.20
1,200 rolls of film, \$2.76 per roll.....	3,312.00
1,200 cassettes, \$0.85 each.....	1,026.00
8 boxes presstapes, \$9.90 each.....	79.20
Developing 1,200 rolls of film, \$1.65 per roll.....	1,980.00



Clerk checks quality of reproduced copy

The supplies needed for the conversion were all purchased at one time to reduce their per unit cost and the paperwork.

Seventeen unskilled persons were hired as temporary employees for this conversion project. The majority had not completed high school, and they were hired at the lowest clerical salary (Government service, grade 1). The first weeks of the conversion were spent familiarizing them with the handling of vital records and training them to operate the microfilm cameras.

The first conversion period began in the summer of 1968, utilizing two leased and one purchased microfilers. The first year microfilmed was 1964, because those records included children to be enrolled in school in the following year; next came

1965-67. We then microfilmed the records of each year until we reached our goal of 1905.

During the first year we corrected, coded, and microfilmed 965,970 birth records (1967-28) and 26,138 death records (May 1969-1967) at a total cost of \$96,000. The cost of personnel was \$62,000, and 70 percent of this sum was spent readying the records for microfilming, or to say it another way, 50 percent of the cost of converting hard copy to microfilm during that first year was spent preparing the records for microfilming.

The second conversion period began in the summer of 1970. This time we employed 15 students for 12 weeks, and in my opinion their production was excellent. We scheduled the 14 high school students and one col-

lege student so that the single camera we had would be manned 24 hours a day, 7 days a week.

During the 12 weeks, 198,000 birth records (1927-05) were prepared for filming, coded, and filmed. The per unit cost of preparing these documents for filming was even greater than the document preparation cost during the previous conversion. Only four of the 14 employees worked as camera operators—10 were needed to prepare the records for filming. I emphasize preparation cost in the hope that most registration areas will not have the expensive preparation cost necessitated by our previously incongruous filming procedures for corrections.

Our ultimate goal of microfilming all birth records from 1970 to 1900 and death certificates from October 1971-67 inclusive has been reached. During the summer program of 1971, the birth records of 1899-74 inclusive were filmed on noncoded roll microfilm. The original records are now stored in the Washington National Records Center, Suitland, Md.

The projected cost of coding and filming about 40,000 vital records in 1972 follows:

Item	Cost
Labor .....	\$1,192.00
Camera operator,	
GS-4 .....	953.60
Supervision .....	238.40
Equipment .....	1,859.90
Input devices (10	
percent annual	
depreciation) .....	1,227.80
Annual service con-	
tract .....	632.10
Supplies .....	210.70
40 rolls of film,	
\$2.76 per roll .....	110.40
Developing 40 rolls	
of film, \$1.65 per	
roll .....	66.00
37 cassettes, \$0.86	
each .....	31.82
100 presstapes .....	2.48
Total cost .....	\$3,262.60

## Benefits of Conversion

Issuance of copies of birth records is now a completely automated microfilm operation. The major benefits of this conversion follow.

1. The microfilming provided 2,620 square feet of additional floorspace, and 900 square feet of this space has been given to the public health laboratory for storage.

2. We have 16 full-time employees, one less than in 1966, and no employee has worked overtime in the past 2 years.

3. Our average time for completing an inperson request for a record has been reduced from 9 minutes to little more than 1 minute. Morale of our clerical staff has improved significantly since the clerks no longer have to search 25-pound indexes and walk through several rooms to provide applicants with the copies they request.

4. The present office layout provides more privacy for our clerical staff than they had had previously.

5. The operator of the two retrieval units can locate a record and print a copy quickly and accurately. A unit can search 1,500 records in 9 seconds and print a copy in 15 seconds.

6. The record can be verified on the reader without printing a copy.

7. Our mail is routinely processed within 24 hours, and even a large influx of requests for verifications seldom takes more than 48 hours to complete.

Corrected records, long the bugaboo of microfilmed vital records, are no longer the problem they once were. With the scratch kit now available from most microfilm equipment manufacturers, deletion of information on a par-

ticular document within a cassette of film is as simple as locating it. Once it is displayed on the screen the operator simply presses a button and a metal prong scratches the emulsion from a portion of the document, telling future operators to ignore this document and retrieve the corrected document. All corrected records are then coded, re-filmed, and placed in a separate cassette (one cassette for each year). Thus, the retrieval of a corrected record increases our search time from a maximum of 27 seconds to 54 seconds for a record that has been corrected or changed in any way since initial filming.

As I look back on the conversion period of this operation, I would make one major change—we could have saved time and money if we had developed our own film. During the conversion we had all our microfilm processed locally, and it was usually 2 or 3 days from the time the film was exposed until it was returned to us for viewing. I would now rent equipment to develop film inhouse and save the expense of developing film at other locations. Inhouse development of film would allow us to note any imperfections quickly, and thereby reduce the amount of unsatisfactory film produced. The cost saving on film would not have been great, but the camera time saved would have been an important cost factor.

## EQUIPMENT REFERENCE

(A) Recordak Miracode, Eastman Kodak Co., Rochester, N.Y.

